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PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in Protectors for the Ends of Fiber Tubes.

We, INTERNATIONAL PAPER COMPANY, a Corporation of the State of New York, United States of America, of 220 East 42nd Street, New York City, United States of America, (Assignees of HERBERT LIPPITT, of Lynn, County of Essex, and State of Massachusetts, United States of America, and EDWIN WILLIAM BEBIE, of Hawthorne, County of Passaic and State of New Jersey, United States of America, both Citizens of the United States of America), do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to means for protecting and substantially closing the ends of fibre tubes such, for example, as the cores of paper reels.

One object of the invention is to provide a sheet material protector which can be economically manufactured and which includes integral means for locking the protector against accidental dislodgment from a fibre tube.

A further object of the invention is to provide a protector of the kind referred to which may be withdrawn from the tube when desired without danger of injury to the hand of the person withdrawing it.

With the foregoing and other objects in view, the present invention provides a one-piece, shallow, dish-shaped seamless sheet metal protector for fibre tubes, comprising an inner body portion having a central finger opening therethrough and providing a broad, smooth, finger engaging surface, an outwardly extending cylindrical portion, an annular circumferential flange at the outer extremity of the cylindrical portion, and tongues integral with the protector, and having the free ends thereof extending outward and projecting beyond the periphery of the cylindrical portion.

In order more clearly to understand the invention, reference is made to the accompanying drawings which illustrate by way of example a protector for the end of a paper reel core. It is to be understood, however, that the invention

is susceptible of employment to provide protectors for various forms of fibre tubes and that the following description is intended to have an illustrative and not a limiting significance.

In said drawings:—

Fig. 1 is a sectional elevation of a reel core broken away between its ends for compactness, and shows at one end of the core a full view of a protector in accordance with the invention, and at the other end a sectional view of a like protector; and

Fig. 2 is a view in elevation of the inner side of one of the protectors.

Reels of paper are ordinarily wound onto a core 1 of heavy cardboard. They require to be shipped from the factory to their ultimate destination where the paper is to be used. During such shipment the ends of the core, if unprotected, are apt to be dented or pressed inward, unless provision is made for guarding against such injury. It is important that the core be maintained in its original cylindrical shape and undeformed, since it is necessary when using the paper from the reel to mount the core upon a suitable shaft which fits the core snugly. Deformation of a core end would substantially interfere with, and possibly prevent, insertion of the shaft in the core.

The protector illustrated herein is designed to afford the requisite protection for the end of the core. The protector 2 consists of a one-piece stamping of sheet metal, preferably strong, resilient metal such as steel, and comprises a body portion 3 having a central opening 4 therein around which a smooth bead 5 is formed, a truncated conical portion 6, a cylindrical portion 7, and an annular flange portion 8. The conical portion 6, because of its taper is adapted to facilitate entry of the protector into the end of a core, even though the core may be slightly deformed or distorted. The cylindrical portion 7 entirely fills the core and supports it so that the core is maintained in a cylindrical shape. The annular flange portion 8 covers the end of the core and prevents mutilation or deformation of the end. The flange 8

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Price 4s. 6d.

also limits the distance to which the protector may be inserted in the core, and thereby avoids the possibility of driving the protector in too far and leaving the 5 end portion of the core without protection.

In order to preclude any possibility of the protector being permitted to drop out of the core by accident, provision is made 10 of retaining tongues 9 integral with the protector. These tongues are punched from the material of the conical and cylindrical portions 6 and 7, are united at their inner ends with the conical portion, and project at their free ends for a short distance only beyond the bounds 15 of the cylindrical portion. Being of resilient material, the tongues are yielding to permit insertion of the protector 20 in the core, but when inserted they dig into the core sufficiently to resist any usual force tending to dislodge the protector, and ordinarily take out a small portion of the core with them when the 25 protector is forcibly extracted. Although the tongues 9 serve effectively to prevent accidental removal of the protector, they cannot prevent intentional removal thereof because the core material is 30 sufficiently soft and yielding to permit its being gouged out by the force which a man is able to exert with his hand upon the protector.

The central opening 4 in the protector 35 body is provided in order that a finger may be inserted through it for the purpose of withdrawing the protector from the core. Since considerable force has to be exerted, there would be a serious 40 danger of cutting the finger or hand if the edges of the protector surrounding the central opening were left rough. It is accordingly a feature that the material

of the protector bordering the opening 4 is turned outward and upset so as to form the bead 5, which is smooth, and which cannot cut the finger. 45

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1). A one-piece, shallow, dish-shaped seamless sheet metal protector for fibre tubes, comprising an inner body portion having a central finger opening therethrough and providing a broad, smooth, finger engaging surface, an outwardly extending cylindrical portion, an annular circumferential flange at the outer extremity of the cylindrical portion, and tongues integral with the protector, and having the free ends thereof extending outward and projecting beyond the periphery of the cylindrical portion. 55

2). A protector as set forth in claim 1, in which the finger opening is surrounded by a smooth bead. 60

3). A protector as set forth in claim 1, which is in the form of a stamping of sheet metal. 65

4). A protector as set forth in claim 1, wherein provision is made of a truncated, conical portion between the body portion and the cylindrical portion and wherein the tongues are united at their bases with the conical portion. 75

5). The protectors for the ends of fibre tubes, substantially as described with reference to the accompanying drawings. 80

Dated this 15th day of January, 1932.

ALBERT L. MOND,
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[This Drawing is a full-size reproduction of the Original.]

Fig. 1.

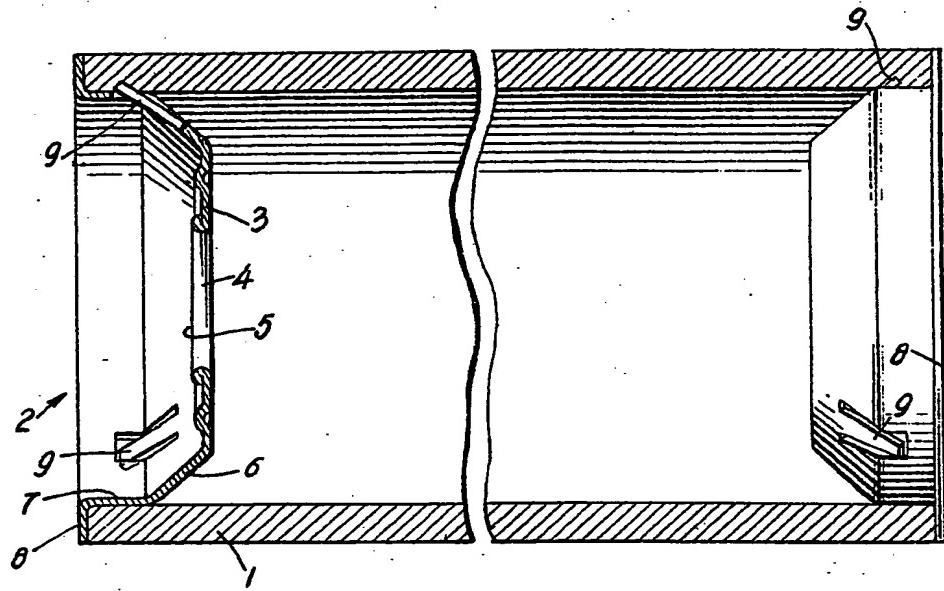
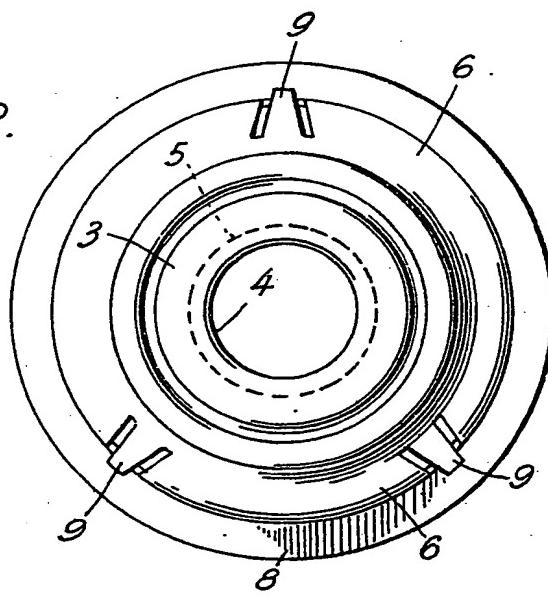


Fig. 2.



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